

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of) Confirmation No.: 7312
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Ghosh) Group Art Unit: 2163
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Application No. 10/824,887) Examiner: Hwa
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Filed: April 13, 2004)
For: COMPILATION AND PROCESSING A PARALLEL SINGLE CURSOR MODEL	

ARGUMENTS FOR PRE-APPEAL BRIEF REVIEW

The rejections of record are clearly not proper and are without basis as they are based on clear factual deficiencies.

Claims 1-7, 11, 14-21, 25, and 29 stand rejected under 35 U.S.C. §103 as allegedly unpatentable over Reiner (U.S. Patent No. 6,289,334) in view of Borden (U.S. Patent No. 5,495,606). Claim 1 will be discussed as follows.

CLEAR ERROR IN REJECTION OF CLAIM 1 UNDER 35 USC §103

Despite the attempt at clarification within the Advisory Action, the rejection of Claim 1 continues to be unclear exactly which portion of Reiner allegedly corresponds to the claimed “slave processes”. The rejection of Claim 1 also continues to be unclear exactly which prior art, and which portion therein, allegedly corresponds to the claimed “set of information”, and also the claimed “sharing”.

Claim 1 recites, inter alia, the following:

- . . . causing a plurality of slave processes to perform said at least one operation by
- sharing the set of information with each slave process of said plurality of slave processes, wherein the set of information shared with each slave process includes
- (a) information about a task to be performed by said slave process,
- and

- (b) information about one or more tasks, to be performed by processes other than the slave process, to execute the database statement; and
 - sending to each slave process of said plurality of slave processes data that indicates which part of the set of information shared with the slave process represents the part of the at least one operation that should be performed by the slave process. (emphasis added)

The rejection of Claim 1 is confusing in that it is unclear exactly which portion of Reiner is being equated to the claimed "slave processes". The Final Office Action is formatted in such a way that any of subqueries, threads, subcursor, executor functions, or pnodes could potentially be what is alleged to be the claimed "slave processes". In addressing this portion of Claim 1, the Final Office Action notes that Reiner discloses referencing pnode types having two executor functions which share the same pnode data structure (Final Office Action, Page 5, Paragraph 3; referencing Reiner's col. 42, lines 16-25). However, it is unclear which portion of Applicant's claims this section is relevant to. Accordingly, in a response to the Final Office Action, Applicant requested clarification.

The Advisory Action mailed August 27 attempted to provide the requested clarification, but was unsuccessful. For convenient reference, the bottom two paragraphs of the "continuation sheet" section of the Advisory Action (page 2) are included herein, with all grammar and punctuation exactly as recited in the original, but with numbering added.

Applicant argued that, "Reiner discloses referencing pnode types having to executor functions which share the same pnode data structure. However, it is unclear which portion of Applicant's claims this section is relevant to. Acknowledgement and clarification is respectfully requested. Examiner respectfully disagrees. From instant specification (1) disclosed the sharing (2) process as follow, "the slaves are to perform their assigned tasks based on the shared execution plan, all the constructs used for the execution of a parallel statement" (paragraph 0030). "On each remote node, the original statement is delinearized, reconstructed, and built into the cursor by one slave, and shared by all others on the same node (paragraph 0034). "Interesting parallel execution statistics are all available in the row sources of the shared plan across all slaves and can be aggregated either live or after a query finishes" (paragraph 0035). "The QSC and all slaves share or use the same parallel single cursor" (paragraph

99037). “The database server provides an infrastructure to store, access, and aggregate statistic across all the shared slave cursors” (paragraph 0072).

In response to Applicant’s arguments (3), Reiner discloses since host variables described in the bind descriptor are not modified by query execution, and since they are referenced identically in all parallel subqueries (4) of the same pcursor, the root cursor’s bind descriptor can be shared (5) by parallel subqueries (column 60, lines 30-44). The subcursor pnode functionality could potentially be decomposed to more than one specialized pnode types, but need not be. It is unique among pnodes types described thus far in having two executor functions which share the same pnode data structure. The master executor is called by the subcursor pnode’s parent (e.g. master). The master and parallel executors can coordinate their work by means of semaphores, with the master checking to see whether a next row is ready whenever one is requested by the subcursor pnode’s parent (to avoid a busy wait it may actually be preferable for the parent of the subcursor node to wait on semaphore of all its children (e.g. slave) until one is ready. In this case, the role of the subcursor’s master executor would be to perform whatever manipulation of buffer pointers and resetting of semaphores (e.g. restricting access to shared resources) is necessary to return a row to the parent, to keep the details of the subcursor’s buffer and semaphore management transparent to the parent, and to factor out these functions from the different possible parent types. The master’s role is somewhat analogous to that of a client-side DBMS software in a client-server DBMS. Conceptually, these tasks could be performed by the parent, so that the master executor is not strictly required.)(column 42, lines 19-46). (Advisory Action, page 2, numbering added)

As stated, Applicant has repeatedly requested clarification of which portions of Reiner, or Borden, correspond to the various steps and elements within Claim 1. The Advisory Action attempts to respond by quoting from the instant specification, as shown in (1) above. However, these quotations are not responsive to Applicant’s inquiries, and suggest that Applicant’s inquiries were not understood. Applicant is familiar with Applicant’s specification, and also Reiner’s disclosure. What Applicant is still not familiar with is which portions of Reiner, or other prior art, correspond with the various steps and elements within Claim 1. The Advisory Action quotes portions of the specifications of both Reiner and Applicant, but still fails to connect these portions to the language of Claim 1.

Regarding (2) above, Applicant notes and agrees that Applicant’s specification describes “sharing”, and that Reiner also describes some type of “sharing”. However, a dictionary also contains the word “sharing”. This will be discussed in more detail with (5) below. At this point, suffice to say that the Advisory Action fails to rectify the lack of connection between the prior art and the various portions of Applicant’s claims. Consequently, the rejections are unclear, unsupportable, and invalid.

Regarding (3) above, the description of Reiner does not appear to be “in response to” any of Applicant’s arguments. Having no better information to go by, despite requests for clarification, Applicant is again forced to guess at the reasoning of the rejection.

Regarding (4) above, Reiner’s host variables being “referenced identically in all parallel subqueries” is a good example of what Applicant is *not* claiming. Note specifically Claim 1 section (b), “information about one or more tasks, to be performed by processes other than the slave process, to execute the database statement”. Again, it is unclear how to construe the rejection, so that Applicant is forced to guess. Are Reiner’s “host variables” meant to correspond with the claimed “set of information”? Following from that, are Reiner’s host variables being “referenced identically in all parallel subqueries” meant to correspond with the claimed “sharing the set of information with each slave process of said plurality of slave processes”? As stated, the rejection as it presently stands is unclear and cannot be responded to without clarification.

Another example of such a lack of clarity occurs in (5) above. The Advisory Action is vague but may be suggesting that Reiner’s “root cursor’s bind descriptor **can be shared** by parallel subqueries” is meant to correspond with the claimed “**sharing** the set of information with each slave process of said plurality of slave processes”. If so, Applicant again notes that both phrases contain some form of the word “share”, but the resemblance ends there. As noted above, a dictionary also contains this word. Originally, the rejection appeared to depend on the Borden reference for the claimed “sharing”. Has the rejection been adjusted to now rely on Reiner for the claimed “sharing”? Clarification is requested.

The Application should not pass to Appeal in its present state, as the existing grounds of the various rejections lack clarity and thus contain clear error.

CLEAR ERROR IN REJECTION OF CLAIM 15 UNDER 35 USC §101

The Advisory Action also asserts that “[a] computer-readable storage medium” includes punchcards (paper) or carrier wave (paragraph 0077) is not hardware or physical article, the 101

rejection is maintained”. In response, Applicant notes that punchcards are indeed a “physical article”. Next, Claim 15 was amended to recite a “computer-readable storage medium” instead of “computer-readable medium”. This is significant because a carrier wave is not a storage medium, but is instead a transmission medium. Although a carrier wave is a non-statutory transmission medium, and therefore subject to rejection under 35 USC §101, that fact is irrelevant because Applicant has already amended various claims to avoid this category. Consequently, the rejection of Claim 15 under 35 USC §101 is another example of clear error.

CONCLUSION

For the reasons set forth above, it is respectfully submitted that the existing rejections are invalid, and that all of the pending claims are now in condition for allowance.

Respectfully submitted,
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